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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,823	01/25/2002	Hironori Matsumoto	0397-0439P	5766

2292 7590 11/06/2002
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EXAMINER
GREENE, PERSHELLE L

ART UNIT	PAPER NUMBER
2826	7

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/054,823

Applicant(s)

MATSUMOTO ET AL

Examiner

Pershelle Greene

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 5-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3, 4.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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Serial Number: 10/054823

Attorney's Docket #: 0397-0439P

Filing Date: 1/25/2002

Applicant: Matsumoto et al.

Examiner: Pershelle Greene

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I claims 1-4, and 9-10 in Paper No. 6 is acknowledged.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3 are being rejected under 35 U.S.C. 102(b) as being anticipated by Hsieh (IBM

Technical Disclosure Bulletin NN78081026).

In claim 1, Hsieh shows, in figure 1, a Schottky barrier diode and a MOS transistor are formed on a silicon substrate. The Schottky barrier diode is made of a silicide layer.

As to claim 3, the silicide layer is made of platinum silicide.

5. Claim 2 is **product-by-process claim**:

Note that a "product by process" claim is directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Thorpe*, 227 USPQ 964, 966; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); and *In re Marosi et al.*, 218 USPQ 289, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear. See also MPEP 2113.

Claim 2 does not distinguish over the Hsieh reference regardless of the process used to form the Schottky barrier layer, because only the final product is relevant, and not the process of making.

6. Claims 1-3 are being rejected under 35 U.S.C. 102(b) as being anticipated by Horiuchi et al. (IEEE 1990 Bipolar Circuits and Technology Meeting).

In claim 1, Horiuchi shows, in figure 5, a Schottky barrier diode and a MOS transistor are formed on a silicon substrate. The Schottky barrier diode is made of a silicide layer.

As to claim 3, the silicide layer is made of titanium silicide.

7. Claim 2 is **product-by-process claim**:

Note that a "product by process" claim is directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Thorpe*, 227 USPQ 964, 966; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); and *In re Marosi et al.*, 218 USPQ 289, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear. See also MPEP 2113.

Claim 2 does not distinguish over the Horiuchi reference regardless of the process used to form the Schottky barrier layer, because only the final product is relevant, and not the process of making.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 4 is being rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (IBM Technical Disclosure Bulletin NN78081026), in view of Iwata et al. (U.S. Patent # 6,255,704).

As to claim 4, claim 4 is being rejected for the same reasons stated above in regard to claim 1. However, Hsieh fails to explicitly show a silicide layer showing a C54 phase.

Iwata et al. is cited for showing a semiconductor device and method for fabricating the same. Specifically, Iwata et al. teaches, referring to column 25 lines 39-46, converting a titanium silicide layer to a C54 crystalline structure.

It would have been obvious to one of ordinary skill in the art to convert the silicide layer of Hsieh to the C54 crystalline structure taught by Iwata et al. for the purpose of lowering the resistivity and thus raising the conductivity.

10. Claim 4 is being rejected under 35 U.S.C. 103(a) as being unpatentable over Horiuchi et al. (IEEE 1990 Bipolar Circuits and Technology Meeting), in view of Iwata et al (U.S. Patent # 6,255,704).

As to claim 4, claim 4 is being rejected for the same reasons stated above in regard to claim 1. However, Horiuchi fails to explicitly show a silicide layer showing a C54 phase.

Iwata et al. is cited for showing a semiconductor device and method for fabricating the same. Specifically, Iwata et al. teaches, referring to column 25 lines 39-46, converting a titanium silicide layer to a C54 crystalline structure.

It would have been obvious to one of ordinary skill in the art to convert the silicide layer of Hsieh to the C54 crystalline structure taught by Iwata et al. for the purpose of lowering the resistivity and thus raising the conductivity.

11. Claims 9-10 are being rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (IBM Technical Disclosure Bulletin NN78081026), in view of Tuttle (U.S. Patent # 6,122,494).

As to claims 9 and 10, claims 9 and 10 are being rejected for the same reasons stated above in regard to claim 1. However, Hsieh fails to explicitly show the device being contained in an IC card including an IC module.

Tuttle is cited for showing radio frequency antenna with current controlled sensitivity. Specifically, Tuttle is cited for disclosing, referring to column 4 lines 44-60, an IC card including and IC module.

It would have been obvious to one of ordinary skill in the art to include the device of Hsieh in the IC card and module of Tuttle for the purpose of the interfacing the device with other elements.

12. Claims 9-10 are being rejected under 35 U.S.C. 103(a) as being unpatentable over Horiuchi et al. (IEEE 1990 Bipolar Circuits and Technology Meeting), in view of Tuttle (U.S. Patent # 6,122,494).

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As to claims 9 and 10, claims 9 and 10 are being rejected for the same reasons stated above in regard to claim 1. However, Horiuchi fails to explicitly show the device being contained in an IC card including an IC module.

Tuttle is cited for showing radio frequency antenna with current controlled sensitivity. Specifically, Tuttle is cited for disclosing, referring to column 4 lines 44-60, an IC card including and IC module.

It would have been obvious to one of ordinary skill in the art to include the device of Hsieh in the IC card and module of Tuttle for the purpose of the interfacing the device with other elements.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pershelle Greene whose telephone number is 703-305-3870. The examiner can normally be reached on M-F 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 703-308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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PLG
October 31, 2002

NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800